Hair Iron

Field of Invention

The present invention relates to hair curling irons used to curl or straighten women's hair.

Discussion of Related Arts

Since the early 1920's, hair curling irons have been used to create various styles of hair curls or to straighten women's hair. The curling irons have been typically heated, either by electricity or by the use of ovens.

If curling irons are excessively hot, they will often damage hair and may injure users who accidentally place the heated region too near their skin. It has been discovered that human hair is well absorbent to infrared radiation in the range of 5 to 10. mu.m. Inventor Takimae in U.S. Patent number 4,740,669 points to ceramic materials like zirconia magnetite and alumina as being well adapted to radiating infrared radiation in this range. As a result, Inventor Takimae created a curling iron using ceramics on the outer surface of the curling iron rod. Unfortunately, the electrical heating element must be carefully regulated to avoid burning hair. A variety of under heated or over heated electrical heating methods has eroded consumer confidence in certain electrically heated curling irons. Takimae's curling iron is heated using an electrical resistance core.

Inventor Mack in U.S. Patent Number 4,602,143, shows a mechanism in which infrared radiation is emitted and temperature is minimized. Ceramics are not used in this mechanism. Inventor Mack's curling iron is also heated using electrical means.

Oven-heated curling irons are typically comprised of a pair of iron tongs hence the name 'hair iron'. Inventor McGee in U.S. Patent Number 5,957,140 shows an oven-heated iron combining the features of being able to straighten and curl the hair. The pair of tongs is composed of metal. Inventor McGee mentions the concern of the metal iron being too heavy and causing fatigue for stylists.

Objects and Advantages

Accordingly, present invention has several objects and advantages.

1. Enclosed wrapping of the ceramic core with a metal casing differentiates this product with conventional iron tools currently on the market.

2. The heat trapping effect design allows ceramic core to retain heat longer than the opened metal casing, allowing the user to use the present invention longer without having to re-heat so.
3. Heat is evenly and predictably distributed on the heating surface when ceramic compound touches all heating surface. Since the ceramic compound retain heat longer than metal, having constant contact with metal surface prevents hot spots on the heating surface. Hot spots occur when certain areas cool faster than other.

Brief description of the drawings

Figure 1 is a side view of the first embodiment

Figure 2 is a rear perspective view of the first embodiment

Figure 3 is a front perspective view of the first embodiment

Figure 3a is a front view of the first embodiment

Figure 3b is a rear view of the first embodiment

Figure 3c is a cross sectional view of a barrel portion of the first embodiment

Figure 4 is a front perspective view of the second embodiment

Figure 5 is a side view of the second embodiment

Figure 5a is a front view of the second embodiment

Figure 5b is a rear view of the second embodiment

Figure 5c is a cross sectional view of the single barrel of the second embodiment

Figure 6 is a front perspective view of the third embodiment

Figure 7 is a side view of the third embodiment

Figure 7a is a front view of the third embodiment

Figure 7b is a rear view of the third embodiment

Figure 8 is a front perspective view of the fourth embodiment

Figure 9 is a side view of the fourth embodiment

Figure 9a is a front view of the fourth embodiment

Figure 9b is a rear view of the fourth embodiment

Figure 9c is a cross sectional view of the double barrel of the fourth embodiment

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

The present invention relates to ceramic filled oven heated irons lacking electrical core heating elements. Ceramic cores retain heat and are protected by a metal jacket. The ceramic core allows transfer of heat to the surrounding hair.

The first embodiment as seen in figure one shows the hair iron 110 having an upper handle sleeve 145 and a lower handle sleeve 150 enveloping a pair of handles 140 and pivotally cooperating at a pivot junction 135 also called the clip assembly point. The clip extension protrudes from the clip assembly 135 and terminates in a pair of barrels. The upper barrel 120 is parallel to a lower barrel 125 and forms a pair of tong blades 115.

A pair of tong blades include a first tong blade and a second tong blade the upper barrel may have a semicircular cross section comprising a ceramic core enveloped in a metal jacket mounted on the first tong blade. The lower barrel may have a semicircular cross section comprising a ceramic core enveloped in a metal jacket mounted on the second tong blade. The upper and lower barrels meet to form an interface for holding hair to be straightened, while an upper handle and a lower handle form a pair of handles. The clip assembly pivotally joins the pair of handles to the pair of tong blades, so that the first tong blade and upper barrel is integrally formed with the lower handle, and the second tong blade and lower barrel is integrally formed with the upper handle.

The pair of tong blades receives a person's hair strands in a flat configuration where the hair between the blades can be pressed straight. The blades may be used for straightening hair. The handles and the handles sleeves allow a user to twirl the pair of blades 115 and change position with one hand only or wrap the hair around the outside circumference of the barrel portion 220 and 230 shown in figure 3a. The heat stored in the ceramic core material 430 transfer to the hair. A metal sheath 420 envelops the ceramic core material 430 and offers protection for the ceramic.

The first embodiment shows a "straightener" or a "flat iron." A flat iron is normally used to straighten and flatten hair. Those with curly or wavy hair and those who want to smooth out their ends would could use the invention as shown in the first embodiment. To use this tool, the

user must maintain a strand of hair between the flat areas of the tool and slowly drag downward from the roots to the ends. The flat iron in the first embodiment would not be ideal to curl hair because the flatness in the middle and the curved surface of the tool will leave an angular crease if applied to the hair for a long period of time.

A second embodiment shown in figure 4 includes a single barrel 440 cooperating with a lower blade. The lower blade is curved and formed of rigid metal planar material and does not contain ceramic heat emitting material. The barrel holds a strand of hair and can curl hair wrapped around the outside circumference of the barrel. The cross sectional view shown in figure 5 provides a curved hair travel path. The ceramic material shown in figure 5C has a large cross section and is thus capable of retaining a substantial amount of heat.

The second embodiment shows what is typically referred to as a "curling iron." Not only does the second embodiment allow a user with straight hair waves and curls, it also provides volume for those with finer hair. The size of the cylinder that makes up this tool is crucial; the larger the circumference of the cylinder, the larger the curls become. The curling iron with the larger cylindrical circumference produces bigger waves, while the curling iron with the smaller cylindrical circumference produces tighter curls and eventually achieves a spiral effect. To use the second embodiment, the user must maintain a strand of hair between the clip and the cylinder and use upward rolling motions, in which the curling starts from the ends to the roots.

A third embodiment of the present invention includes the device shown in figure six and seven. The lack of a ceramic core in the upper and lower blade allow a user to cool hair, or present limited heat for hair. As seen in the cross sectional view of figure 7. The upper blade fits into the lower blade forming a curved path for hair. The curved path is useful in a variety of cosmetology implementations.

The third embodiment in figure 7 represents a tool that can serve as both a curling and straightening device. Since using the curling iron may improperly create angular creases at its ends, this tool is useful to smooth creases while leaving a curly accent to the ends. The third embodiment of the invention can also be used after blow-drying to smooth hair, similar to the

effects of the flat iron, of the first embodiment. The crescent design of this tool however, will leave a slight wave rather than dull and straight ends. This tool can also be used to flip a user's hair outwards. This would be a popular tool amongst users with short hair because the crescent design of this tool is ideal to grasp short strands of hair.

A fourth embodiment of the present invention is shown in figure eight and nine. A double barrel upper barrel portion cooperates with a double lower barrel portion whereby the upper barrel portion forms a wave pattern with the lower barrel portion. The wave pattern allows a user to create wavy patterns in hair.

The fourth embodiment is a "crimper." Here the user must maintain strands of hair between the two cylinders and the bottom plate and apply pressure to one section at a time. The fourth embodiment cannot be used with continuous rolling motions; this will end up pulling the user's hair and result in undesired creases in the users' hair. This tool leaves the hair wavy. The fourth embodiment cannot produce spiral effects as Embodiment 2 can because this tool merely serves as a curved pattern that needs to be compressed onto one section of a strand of hair at a time.

The hair iron has an upper handle sleeve Fig. 4, 140 mounted and rotatably free on the upper handle 210. The upper handle has a circular uniform cross section receiving the upper handle sleeve. The upper handle sleeve has an annular uniform cross-section, and the upper handle sleeve may rotate about the upper handle. The upper handle sleeve axis of rotation parallels the central axis of the upper handle.

The lower handle sleeve 150 is mounted and rotatably free on the lower handle 140. The lower handle has a circular uniform cross section receiving the lower handle sleeve. The lower handle sleeve has an annular uniform cross-section. The lower handle sleeve may rotate about the lower handle and the lower handle sleeve axis of rotation parallels the central axis of the lower handle.

The foregoing describes the preferred embodiments of the invention. Modifications may be made without departing from the spirit and scope of the invention as set forth in the following claims.

CALL OUT LIST OF ELEMENTS

110 Hair Curling Iron

115 Tong Blades

120 Upper Barrel Portion

125 Lower Barrel Portion

130 Clip Extension

135 Clip Assembly

140 Handle

145 Upper Handle Sleeve

150 Lower Handle Sleeve

210 Handle Sleeve

220 Barrel Portion

230 Barrel Portion

240 Handle Sleeve

310 Handle Sleeve

320 Barrel Portion

330 Barrel Portion

340 Handle Sleeve

410 Surface of Barrel Portion

420 Sheath

430 Ceramic Core

440 Single Barrel

860 Lower Portion of Double Barrel

880 Double Barrel